

**Amendment to the Drawing:**

The drawing sheet attached in connection with the above-identified application containing Figs. 6-8 is being presented as a new formal drawing sheet to be substituted for the previously submitted drawing sheet. The drawings Fig. 7 is amended. Specifically the title of Fig. 7 is amended as follows:

PRESSURE WITH GAS OF THE SAME RATIO ( $N_2:O_2 = [[20:80]]$  80:20)

**REMARKS**

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

***In the Specification:***

The specification has been amended to correct some minor informalities to make the amended portions of the specification consistent with other the portions of the specification. For example, on the Original Specification recites 0.003 MPa at least on page 6, lines 13 – 21. No new matter has been added.

***In the Drawings:***

The Title of Fig. 7 was amended to recite  $N_2:O_2 = 80:20$ , to make it consistent with the bar graph as shown. The ratio of Nitrogen is higher than Oxygen. No new matter is added.

***Status of the Claims***

Claims 1 and 4 are amended. Claims 7 - 13 are added. The original specification recites an oxide superconductor having a sheath portion covering said oxide superconductor during a heat treatment and the sheath portion comprising one of silver and silver alloy. (For example at pg. 8, ll. 7-19; pg. 10, l. 14, l. 28; pg. 20, l. 20; pg. 34, l. 7 and pg. 40, ll. 3-5) Thus no new matter is added.

***Claim Rejections – 35 U.S.C. § 102***

Claims 4-5 are rejected under 35 U.S.C. § 102(b) as anticipated by or, the alternative, under 35 U.S.C. 103(a) as obvious over Li et al. (U.S. Patent No. 6, 247,224). This rejection is respectfully traversed.

Claim 4, as amended, recites among other features, oxide superconductor having a sheath portion covering said oxide superconductor and the sheath portion comprising one of silver and silver alloy. Li et al. fail to disclose among other feature, an oxide superconductor

having a sheath portion prior to a heat treatment comprising one of silver or silver alloy and an oxide superconductor exhibiting sintering density of at least 93%.

Instead Li et al. disclose the removal of a silver sheath instead of using a silver sheath. (Li et al., col. 21, ll. 23-24) Thus, Li et al. fail to teach suggest or render predictable an oxide superconductor having a sheath portion covering said oxide superconductor, and the sheath portion comprising silver or a silver alloy.

Li et al. fails to teach, suggest or render predictable other features of claim 4 such as, an oxide superconductor exhibiting sintering density of at least 93%. Instead, Li et al. disclose a multifilamentary wire is subject to heat treatment in (step 87) after high reduction rolling (step 86). (Fig. 7, col. 19, l. 56 to col. 20 l. 13) The multifilament superconducting article 40 after a single high reduction rolling draft has a filament density of  $\geq 95\%$  theoretical density. If a filament has a density of  $\geq 95\%$  before the heat treatment of step 87 is performed, then the density of the filament would decrease to less than 93% after the heat treatment because of the expansion of the superconductor. In particular, Li et al. discloses that after rolling the density is about 80% theoretical density and not at least 93%. (Col. 15, ll. 25-29) The multifilamentary wire in the present invention has a density of at least 93% which is greater than 80% theoretical density. Therefore Li et al. fails to teach a density of at least 93%.

Thus, Li et al. fail to teach suggest or render predictable feature of claim 4. Therefore claim 4 is believed to be allowable. Because claims 5 and 6 depend from claim 4, they are believed to be allowable for at least the same reasons claim 4 is believed to be allowable.

***Claim Rejections – 35 U.S.C. § 103***

Claims 1-3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Li et al (U.S. Patent No. 6, 247,224). This rejection is respectfully traversed.

Claim 1, as amended, recites among other features, oxide superconductor having a sheath portion covering said oxide superconductor and the sheath portion comprising one of silver and silver alloy. Li et al. fail to teach, suggest or render predictable among other

feature, an oxide superconductor having a sheath portion prior to a heat treatment comprising one of silver or silver alloy an oxide superconductor exhibiting sintering density of at least 93%.

Instead Li et al. disclose the removal of a silver sheath instead of using a silver sheath prior to heat treatment to suppress ballooning. (Li et al., col. 21, ll. 23-24) Thus, Li et al. fail to teach suggest or render predictable an oxide superconductor having a sheath portion covering said oxide superconductor, and the sheath portion comprising silver or a silver alloy.

Li et al. fails to teach, suggest or render predictable other features of claim 4 such as, an oxide superconductor exhibiting sintering density of at least 93%. Instead, Li et al. disclose a multifilamentary wire is subject to heat treatment in (step 87) after high reduction rolling (step 86). (Fig. 7, col. 19, l. 56 to col. 20 l. 13) The multifilament superconducting article 40 after a single high reduction rolling draft has a filament density of  $\geq 95\%$  theoretical density. If a filament has a density of  $\geq 95\%$  before the heat treatment of step 87 is performed, then the density of the filament would decrease to less than 93% after the heat treatment because of the expansion of the superconductor. In particular Li et al. discloses that after rolling the density is about 80% theoretical density and not at least 93%. (Col. 15, ll. 25-29) The multifilamentary wire in the present invention has a density of at least 93% which is greater than 80% theoretical density. Therefore Li et al. fails to teach a density of at least 93%.

Therefore, claim 1 is believed to be allowable. Because claims 2 and 3 depend from claim 1, they are believed to be allowable for at least the same reasons claim 1 is believed to be allowable.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Li et al. (U.S. Patent No. 6, 247,224). This rejection is respectfully traversed.

Claim 6 depends from claim 4, and it is believed to be allowable for at least the same reasons claim 4 is believed to be allowable.

Claims 1-6 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Ikeno et al. (U.S. Patent No. 5,045,527). This rejection is respectfully traversed.

Independent claims 1 and 4 recites, among other features, an oxide superconductor having a sheath portion covering said oxide superconductor, and the sheath portion comprising silver or a silver alloy. Ikeno et al. fail to teach, suggest or render predictable at least an oxide superconductor having a sheath portion covering said oxide superconductor, and the sheath portion comprising silver or a silver alloy.

Instead, Ikeno et al. teach a wire being heat treated with its core exposed that is covered with solder after the heat treatment and not a silver sheath. (Col. 15, ll. 19 – 26) Accordingly, the sheath portion of the oxide superconducting wire of Ikeno et al. is made of solder and not silver or silver alloy. The enumerated solder materials do not include silver or a silver alloy and instead recite, Aluminum, Tin, Zinc, Lead and etc. (Col. 11, ll. 27 – 34) In essence, Ikeno et al. fail to teach suggest or render predictable an oxide superconductor having a sheath portion covering said oxide superconductor, and the sheath portion comprising silver or a silver alloy.

Therefore, claims 1 and 4 is believed to be allowable over Ikeno et al. Because claims 2 and 3 depend from claim 1 and include each feature of claim 1, they are believed to be allowable for at least the same reason claim 1 is believed to be allowable. Because claims 5 and 6 depend from claim 4 and include each feature of claim 4, they are believed to be allowable for at least the same reasons claim 4 is believed to be allowable.

#### *New Claims*

Claims 7 and 9 recites, the oxide superconductor wire has the sheath covering during a heat treatment. Ikeno et al. and Li et al., alone or in combination, fail to teach the above recited feature. Instead as discussed above Ikeno et al. and Li et al. teach removing the sheath portion during heat treatment. Therefore claims 7 and 8 are believed to be allowable.

Claims 8 and 10 recites, wherein the oxide superconductor wire and the sheath are sintered. Both Ikono et al. and Li et al., alone or in combination fail to teach or suggest an oxide superconductor wire and a sheath that are sintered. Instead as discussed above Li et al. teach removing the sheath during sintering. Ikono et al. fail to teach a silver sheath and instead teaches using solder sheath after the sintering. Therefore claims 8 and 10 are believed to be allowable. Claim 8 and 10 depend from claim 1 and 4, they are believed to be allowable for at least the same reasons claim 1 and 4 are believed to be allowable.

Claim 11 recites, among other features, a method for creating a superconducting cable comprising: providing an oxide superconducting wire comprising an oxide superconductor having a sheath portion covering said oxide superconductor during a heat treatment and the sheath portion comprising silver or a silver alloy. As discussed above with reference to claims 1 and 4, both Ikono et al. and Li et al., alone or in combination, fail to teach or suggest a oxide superconducting wire having a sheath portion covering said oxide superconductor during a heat treatment. Ikono et al. and Li et al. also fail to disclose a oxide superconductor with a sintering density of at least 93%. In particular, Li et al. discloses that after rolling the density is about 80% theoretical density and not at least 93%. (Col. 15, ll. 25-29) Therefore claim 9 is believed to be allowable. Because claims 12 and 13 depend from claim 11 they are believed to be allowable for at least the same reasons claim 11 is believed to be allowable.

### ***Concluding Remarks***

After amending the claims as set forth above, claims 1-13 are pending in this application.

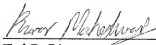
Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment,

to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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